

IMM 703: DECONSTRUCTING IMMUNOLOGY PRESENTATIONS

COURSE RATIONALE

Journal articles and presentations are the most common ways that science is disseminated. This course will provide you with opportunities to dissect research articles and seminars throughout the semester, helping you develop techniques to process the information presented in these formats. The goal is to help you cultivate skills in interpreting journal articles and in communicating science.

COURSE DESCRIPTION

Every week, we will prepare for Wednesday's seminar by discussing the associated reading on Monday. As a class, we will conduct a critical analysis of the research paper in terms of its background, significance, research question(s), hypotheses, methods, data, and results. The paper will be divided into sections and students will be responsible for presenting their assigned sections to the class. On Wednesday, students will attend the scheduled seminar, focusing on a particular aspect of the presentation. Finally, on Friday, we will discuss the seminar and consider future directions for the research by generating new hypotheses and designing experiments to possibly test them.

For assignments, all students will be required to complete a thorough reading of the paper and add to their annotated bibliography throughout the semester, in the format that will be discussed in class. Students will be assigned to portions of papers (either in pairs or individually) and will be responsible for presenting the information and answering questions about it. On Fridays, pairs of students will be assigned to lead class discussion about the future directions of

LEARNING OBJECTIVES

- 1) Learn how to read research articles efficiently.
- 2) Develop skills to critically evaluate research articles.
- 3) Develop scientific writing and oral presentation skills.
- 4) *Become proficient at interpreting the results of journal articles, including being able to judge the validity and reliability of these results.
- 5) *Be able to design and propose future experiments (e.g. ask appropriate research questions, collect appropriate data, consider appropriate controls)
- 6) *Further develop scientific reasoning, critical thinking, and problem-solving skills.

GRADING AND REQUIREMENTS

A	94 – 100%	B+	86 – 89%	C+	76 – 79%
A-	90 – 93%	B	83 – 85%	C	73 – 75%
		B-	80 – 82%	C-	70 – 72%

Each semester

25%	Participation & attendance
25%	Presentations
20%	Annotated bibliography
30%	Final project

ASSIGNMENTS

Participation & attendance. While class participation is expected in your 701 course, it is absolutely necessary in this class. All of class time will be run as a discussion, either as a whole class or in small groups. In order to fully dissect research papers and the reasoning behind the experimental design models we will see, it is essential that students share their ideas with one another. See the Imm701 syllabus for more about participation.

Presentations. Students will take turns presenting different parts of research papers each week. This includes the introduction, methods, figures/results, and future experiments. After a thorough read of the entire paper, you will present your understanding of the section you are assigned with the class and/or elicit input from your classmates about the section until the whole class understands that section.

Annotated bibliography. You will keep a running bibliography for this course, following a format that you will be given in class. Before every Monday class meeting, you will submit your annotation for the week's reading assignment. Throughout the week, as you engage with your classmates and listen to the seminar speaker, you should edit your annotation as anything you may be confused about is clarified. You are welcome and encouraged to add to the given annotation format in any way that will help your understanding.

Final Project. See Imm701 syllabus.

Fall Schedule

Date		Assignment	Presenter	
September	9/2	Fri		
	9/5	Mon	Speaker: Dr. Doug Green Verbist, K. C., Guy, C. S., Milasta, S., Liedmann, S., Kamiński, M. M., Wang, R., & Green, D. R. (2016). Metabolic maintenance of cell asymmetry following division in activated T lymphocytes. <i>Nature</i> , 532(7599), 389-393.	Diane
	9/9	Fri	Discussion	Diane
	9/12	Mon	Speaker: Dr. Joseph Sun O'Sullivan, T. E., Rapp, M., Bhardwaj, P., Fan, X., Dannenberg, A., & Sun, J. C. Y. (2016). Adipose-resident group 1 innate lymphoid cells promote obesity-associated insulin resistance. <i>The Journal of Immunology</i> , 196(1 Supplement), 188-1.	Diane
	9/16	*Fri	Discussion	Diane
	9/19	Mon	Speaker: Dr. Daniel Kaplan Mohammed, J., Beura, L. K., Bobr, A., Astry, B., Chicoine, B., Kashem, S. W., ... & Kaplan, D. (2016). Stromal cells control the epithelial residence of DCs and memory T cells by regulated activation of TGF- β . <i>Nature immunology</i> , 17(4), 414-421.	Diane
	9/23	Fri	Discussion	[Students]
	9/26	Mon	Speaker: Dr. Jason Cyster Zhang, Y., Roth, T. L., Gray, E. E., Chen, H., Rodda, L. B., Liang, Y., ... & Cyster, J. G. (2016). Migratory and adhesive cues controlling innate-like lymphocyte surveillance of the pathogen-exposed surface of the lymph node. <i>eLife</i> , 5, e18156.	[Students]
	9/30	Fri	Discussion	[Students]
	○	10/3	Mon	Speaker: Dr. Petr Broz

		(?)Broz, Petr; Monack, Denise M (2013). Newly described pattern recognition receptors team up against intracellular pathogens. Nature reviews. Immunology, 13(8), 551-65.	
10/7	*Fri	Discussion	[Students]
10/10	Mon	Columbus Day	
10/14	Fri		
10/17	Mon	Speaker: Dr. Feng Shao Shi, J., Zhao, Y., Wang, K., Shi, X., Wang, Y., Huang, H., ... & Shao, F. (2015). Cleavage of GSDMD by inflammatory caspases determines pyroptotic cell death. Nature, 526(7575), 660-665.	[Students]
10/21	Fri	Discussion	[Students]
10/24	Mon	Speaker: Dr. Jeffrey Ravetch Pincetic, A., Bournazos, S., DiLillo, D. J., Maamary, J., Wang, T. T., Dahan, R., ... & Ravetch, J. V. (2014). Type I and type II Fc receptors regulate innate and adaptive immunity. Nature immunology, 15(8), 707-716.	[Students]
10/28	Fri	Retreat: No Class	
10/31	Mon		
November	11/4	Fri	Discussion [Students]
	11/7	Mon	Speaker: Dr. Joseph Craft Ray, J. P., Staron, M. M., Shyer, J. A., Ho, P. C., Marshall, H. D., Gray, S. M., ... & Craft, J. (2015). The interleukin-2-mTORc1 kinase axis defines the signaling, differentiation, and metabolism of T helper 1 and follicular B helper T cells. Immunity, 43(4), 690-702. [Students]
	11/11	Fri	Discussion [Students]
	11/14	Mon	Speaker: Dr. Pere Santamaria Clemente-Casares, X., Blanco, J., Ambalavanan, P., Yamanouchi, J., Singha, S., Fandos, C., ... & Santamaria, P. (2016). Expanding antigen-specific regulatory networks to treat autoimmunity. Nature. [Students]
	11/18	*Fri	Discussion [Students]
	11/21	Mon	
	11/25	Fri	Thanksgiving
	11/28	Mon	Speaker: Dr. Richard Flavell Eisenbarth, S. C., Colegio, O. R., O'Connor, W., Sutterwala, F. S., & Flavell, R. A. (2008). Crucial role for the Nalp3 inflammasome in the immunostimulatory properties of aluminium adjuvants. Nature, 453(7198), 1122-1126. [Students]
Dec	12/2	Fri	Discussion [Students]
	12/5	Mon	Speaker: Dr. Morgan Huse Basu, R., Whitlock, B. M., Husson, J., Le Floc'h, A., Jin, W., Oylar-Yaniv, A., ... & Huse, M. (2016). Cytotoxic T Cells Use Mechanical Force to Potentiate Target Cell Killing. Cell, 165(1), 100-110.
	12/9	*Fri	